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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/559,719

12/05/2005

Dirk Leinweber

2003DE428

3847

25255

7590

12/23/2008

CLARIANT CORPORATION  
INTELLECTUAL PROPERTY DEPARTMENT  
4000 MONROE ROAD  
CHARLOTTE, NC 28205

EXAMINER

WANG, CHUN CHENG

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

12/23/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/559,719

**Applicant(s)**

LEINWEBER ET AL.

**Examiner**

Chun-Cheng Wang

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 04/07/2006
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. DE 10325198.7, filed on 06/04/2003. Claims 1-8 are pending.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites molecular weight of from 1000 to 100000. Different average values can be defined depending on the statistical method that is applied. The weighted mean can be taken with the weight fraction, the mole fraction or the volume fraction: weight average molar mass or  $M_w$ , number average molar mass or  $M_n$  and viscosity average molar mass or  $M_v$ . It is not clear which weighted molecular claim 1 is meant for.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 1796

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Berkhof et al. (US 5164116 A) in view of Knischka et al. ("Functional Poly(ethylene oxide) Multiarm Star Polymers: Core-First Synthesis Using Hyperbranched Polyglycerol Initiators", *Macromolecules*, 2000, 33 (2), pp 315-320, December 29, 1999).

Berkhof et al. disclose oil breaking components having formula of  $[\text{HO}-(\text{C}_2\text{H}_4\text{O})_d(\text{C}_3\text{H}_6\text{O})_e]_k\text{---R}'\text{---}[(\text{C}_3\text{H}_6\text{O})_f(\text{C}_2\text{H}_4\text{O})_g\text{H}]_l$ , in which  $\text{R}'$  is a  $\text{C}_{1-4}$  alkyl polyol, e.g. glycerol,  $d + g$  is 10-80 (read on claims 1 and 4: degree of alkoxylation of from 1 to 100 or 1 - 70 alkylene oxide units per free OH group); the propylene oxide content is between 20 and 90 wt %, (read on claims 1 and 5-6);  $k$  is 1 or 2; and  $l$  is 1 or 2, and which are optionally reacted with difunctional crosslinkers, such as diisocyanates and/or dicarboxylic acids (column 4, lines 57-68). Suitable difunctional crosslinkers for preparing the crosslinked compounds include: diisocyanates and dicarboxylic acids, such as adipic acid and phthalic acid (read on claims 1 and 7) (column 5, lines 34-45). The amount of demulsifier to be employed for breaking crude oil emulsion is 1 to 5,000 ppm, i.e. 0.0001 to 0.5 % (read on claim 1) (column 4, lines 25-27).

Art Unit: 1796

Berkhof et al. is silent on the molecular weight, number of glycerol units in polyglycerol and crosslinking after alkoxylation of polyglycerol.

Knischka et al. disclose controlled synthesis of hyperbranched polyglycerol, based on anionic ring-opening multibranching polymerization, permits tailoring the degree of polymerization ( $DP_n = 15-100$ ), i.e. number of units of glycerol is 15-100, and leads to polydispersities below 1.5. The solubility limitations of the highly polar hyperbranched polyglycerol can be overcome by the attachment of several propylene oxide units to the polyglycerol end groups, permitting control of the polarity of the hyperbranched structure without variation of the overall functionality (page 315, last paragraph to page 316, first paragraph). In addition, end-functional multiarm star polymers possess unusually high functionality that permits further modification or cross-linking (page 315, 1<sup>st</sup> paragraph, last 3 lines). Knischka et al. also disclose alkoxyated polyglycerol multi-arm polymers having molecular weight of 8000 to 51000 (Table 1).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains to utilize the teaching from Berkhof et al. and Knischka et al. to tailor the synthesis of the alkoxyated polyglycerol for oil demulsifier.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun-Cheng Wang whose telephone number is (571)270-5459. The examiner can normally be reached on Monday to Friday w/alternate Friday off.

Art Unit: 1796

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/  
Primary Examiner, Art Unit 1796

Chun-Cheng Wang  
Examiner, Art Unit 1796

/CCW/